

0590  
Troy

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RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/001,245

DATE: 12/16/2002 ⑥  
TIME: 13:00:10

Input Set : A:\Sequence Listing (ASCII copy).txt  
Output Set: N:\CRF4\12162002\J001245.raw

3 <110> APPLICANT: HOLM, Jens  
4 IPSEN, Henrik  
5 LARSEN, Jorgen N.  
6 SPANGFORT, Michael D.  
8 <120> TITLE OF INVENTION: Novel mutant allergens  
10 <130> FILE REFERENCE: 4305/1H942-US2  
12 <140> CURRENT APPLICATION NUMBER: US 10/001,245  
13 <141> CURRENT FILING DATE: 2001-11-15  
15 <150> PRIOR APPLICATION NUMBER: US 60/298,170  
16 <151> PRIOR FILING DATE: 2001-06-14  
18 <150> PRIOR APPLICATION NUMBER: US 60/249,361  
19 <151> PRIOR FILING DATE: 2000-11-16  
21 <160> NUMBER OF SEQ ID NOS: 217  
23 <170> SOFTWARE: PatentIn version 3.1  
25 <210> SEQ ID NO: 1  
26 <211> LENGTH: 160  
27 <212> TYPE: PRT  
28 <213> ORGANISM: Betula verrucosa  
30 <220> FEATURE:  
31 <221> NAME/KEY: mutation  
32 <222> LOCATION: (28)..(28)  
33 <223> OTHER INFORMATION:  
35 <220> FEATURE:  
36 <221> NAME/KEY: mutation  
37 <222> LOCATION: (32)..(32)  
38 <223> OTHER INFORMATION:  
W--> 40 <220>  
41 <221> NAME/KEY: mutation  
42 <222> LOCATION: (78)..(78)  
43 <223> OTHER INFORMATION:  
W--> 45 <220>  
46 <221> NAME/KEY: mutation  
47 <222> LOCATION: (103)..(103)  
48 <223> OTHER INFORMATION:  
W--> 50 <220>  
51 <221> NAME/KEY: mutation  
52 <222> LOCATION: (145)..(145)  
53 <223> OTHER INFORMATION:  
W--> 55 <220>  
56 <221> NAME/KEY: mutation  
57 <222> LOCATION: (156)..(156)  
58 <223> OTHER INFORMATION:  
W--> 60 <220>

RAW SEQUENCE LISTING  
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Input Set : A:\Sequence Listing (ASCII copy).txt  
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61 <221> NAME/KEY: mutation  
 62 <222> LOCATION: (160)..(160)  
 63 <223> OTHER INFORMATION:  
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 67 Gly Val Phe Asn Tyr Glu Thr Thr Ser Val Ile Pro Ala Ala  
 68 1 5 10 15  
 71 Arg Leu Phe Lys Ala Phe Ile Leu Asp Gly Asp Thr Leu Phe Pro Gln  
 72 20 25 30  
 75 Val Ala Pro Gln Ala Ile Ser Ser Val Glu Asn Ile Glu Gly Asn Gly  
 76 35 40 45  
 79 Gly Pro Gly Thr Ile Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe  
 80 50 55 60  
 83 Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys  
 84 65 70 75 80  
 87 Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu  
 88 85 90 95  
 91 Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Pro Asp Gly Gly Ser  
 92 100 105 110  
 95 Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val  
 96 115 120 125  
 99 Lys Ala Glu Gln Val Lys Ala Ser Lys Glu Met Gly Glu Thr Leu Leu  
 100 130 135 140  
 103 Glu Ala Val Glu Ser Tyr Leu Leu Ala His Ser His Ala Tyr Asn Asn  
 104 145 150 155 160  
 107 <210> SEQ ID NO: 2  
 108 <211> LENGTH: 159  
 109 <212> TYPE: PRT  
 110 <213> ORGANISM: Betula verrucosa  
 112 <220> FEATURE:  
 113 <221> NAME/KEY: mutation  
 114 <222> LOCATION: (5)..(5)  
 115 <223> OTHER INFORMATION:  
 117 <220> FEATURE:  
 118 <221> NAME/KEY: mutation  
 119 <222> LOCATION: (42)..(42)  
 120 <223> OTHER INFORMATION:  
**w--> 122 <220>**  
 123 <221> NAME/KEY: mutation  
 124 <222> LOCATION: (45)..(45)  
 125 <223> OTHER INFORMATION:  
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 128 <221> NAME/KEY: mutation  
 129 <222> LOCATION: (78)..(78)  
 130 <223> OTHER INFORMATION:  
**w--> 132 <220>**  
 133 <221> NAME/KEY: mutation  
 134 <222> LOCATION: (103)..(103)  
 135 <223> OTHER INFORMATION:  
**w--> 137 <220>**

RAW SEQUENCE LISTING  
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Input Set : A:\Sequence Listing (ASCII copy).txt  
 Output Set: N:\CRF4\12162002\J001245.raw

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138 <221> NAME/KEY: mutation
139 <222> LOCATION: (123)..(123)
140 <223> OTHER INFORMATION:
W--> 142 <220>
143 <221> NAME/KEY: mutation
144 <222> LOCATION: (134)..(134)
145 <223> OTHER INFORMATION:
W--> 147 <220>
148 <221> NAME/KEY: mutation
149 <222> LOCATION: (156)..(156)
150 <223> OTHER INFORMATION:
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154 Gly Val Phe Asn Val Glu Thr Glu Thr Ser Val Ile Pro Ala Ala
155 1 5 10 15
158 Arg Leu Phe Lys Ala Phe Ile Leu Asp Gly Asp Asn Leu Phe Pro Lys
159 20 25 30
162 Val Ala Pro Gln Ala Ile Ser Ser Val Ser Asn Ile Ser Gly Asn Gly
163 35 40 45
166 Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
167 50 55 60
170 Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
171 65 70 75 80
174 Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
175 85 90 95
178 Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Pro Asp Gly Gly Ser
179 100 105 110
182 Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Ile Gly Asp His Glu Val
183 115 120 125
186 Lys Ala Glu Gln Val Glu Ala Ser Lys Glu Met Gly Glu Thr Leu Leu
187 130 135 140
190 Arg Ala Val Glu Ser Tyr Leu Leu Ala His Ser His Ala Tyr Asn
191 145 150 155
194 <210> SEQ ID NO: 3
195 <211> LENGTH: 159
196 <212> TYPE: PRT
197 <213> ORGANISM: Betula verrucosa
199 <220> FEATURE:
200 <221> NAME/KEY: mutation
201 <222> LOCATION: (28)..(28)
202 <223> OTHER INFORMATION:
204 <220> FEATURE:
205 <221> NAME/KEY: mutation
206 <222> LOCATION: (32)..(32)
207 <223> OTHER INFORMATION:
W--> 209 <220>
210 <221> NAME/KEY: mutation
211 <222> LOCATION: (45)..(45)
212 <223> OTHER INFORMATION:
W--> 214 <220>

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RAW SEQUENCE LISTING  
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Input Set : A:\Sequence Listing (ASCII copy).txt  
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215 <221> NAME/KEY: mutation  
216 <222> LOCATION: (108)..(108)  
217 <223> OTHER INFORMATION:

W--> 219 <400> 3

221 Gly Val Phe Asn Tyr Glu Thr Thr Ser Val Ile Pro Ala Ala  
222 1 5 10 15  
225 Arg Leu Phe Lys Ala Phe Ile Leu Asp Gly Asp Thr Leu Phe Pro Gln  
226 20 25 30  
229 Val Ala Pro Gln Ala Ile Ser Ser Val Glu Asn Ile Ser Gly Asn Gly  
230 35 40 45  
233 Gly Pro Gly Thr Ile Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe  
234 50 55 60  
237 Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe Lys  
238 65 70 75 80  
241 Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu  
242 85 90 95  
245 Lys Ile Ser Asn Glu Ile Lys Ile Val Ala Thr Gly Asp Gly Gly Ser  
246 100 105 110  
249 Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val  
250 115 120 125  
253 Lys Ala Glu Gln Val Lys Ala Ser Lys Glu Met Gly Glu Thr Leu Leu  
254 130 135 140  
257 Arg Ala Val Glu Ser Tyr Leu Leu Ala His Ser Asp Ala Tyr Asn  
258 145 150 155

261 <210> SEQ ID NO: 4

262 <211> LENGTH: 159

263 <212> TYPE: PRT

264 <213> ORGANISM: Betula verrucosa

266 <220> FEATURE:

267 <221> NAME/KEY: mutation

268 <222> LOCATION: (5)..(5)

269 <223> OTHER INFORMATION:

271 <220> FEATURE:

272 <221> NAME/KEY: mutation

273 <222> LOCATION: (45)..(45)

274 <223> OTHER INFORMATION:

W--> 276 <220>

277 <221> NAME/KEY: mutation

278 <222> LOCATION: (65)..(65)

279 <223> OTHER INFORMATION:

W--> 281 <220>

282 <221> NAME/KEY: mutation

283 <222> LOCATION: (97)..(97)

284 <223> OTHER INFORMATION:

W--> 286 <220>

287 <221> NAME/KEY: mutation

288 <222> LOCATION: (134)..(134)

289 <223> OTHER INFORMATION:

W--> 291 <400> 4

RAW SEQUENCE LISTING  
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DATE: 12/16/2002  
TIME: 13:00:10

Input Set : A:\Sequence Listing (ASCII copy).txt  
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293 Gly Val Phe Asn Val Glu Thr Glu Thr Ser Val Ile Pro Ala Ala  
294 1 5 10 15  
297 Arg Leu Phe Lys Ala Phe Ile Leu Asp Gly Asp Asn Leu Phe Pro Lys  
298 20 25 30  
301 Val Ala Pro Gln Ala Ile Ser Ser Val Glu Asn Ile Ser Gly Asn Gly  
302 35 40 45  
305 Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe  
306 50 55 60  
309 Asn Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe Lys  
310 65 70 75 80  
313 Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu  
314 85 90 95  
317 Ser Ile Ser Asn Glu Ile Lys Ile Val Ala Thr Pro Asp Gly Gly Ser  
318 100 105 110  
321 Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val  
322 115 120 125  
325 Lys Ala Glu Gln Val Glu Ala Ser Lys Glu Met Gly Glu Thr Leu Leu  
326 130 135 140  
329 Arg Ala Val Glu Ser Tyr Leu Leu Ala His Ser Asp Ala Tyr Asn  
330 145 150 155

333 <210> SEQ ID NO: 5

334 <211> LENGTH: 159

335 <212> TYPE: PRT

336 <213> ORGANISM: Betula verrucosa

338 <220> FEATURE:

339 <221> NAME/KEY: mutation .

340 <222> LOCATION: (16)..(16)

341 <223> OTHER INFORMATION:

343 <220> FEATURE:

344 <221> NAME/KEY: mutation

345 <222> LOCATION: (28)..(28)

346 <223> OTHER INFORMATION:

W--> 348 <220>

349 <221> NAME/KEY: mutation

350 <222> LOCATION: (32)..(32)

351 <223> OTHER INFORMATION:

W--> 353 <220>

354 <221> NAME/KEY: mutation

355 <222> LOCATION: (103)..(103)

356 <223> OTHER INFORMATION:

W--> 358 <220>

359 <221> NAME/KEY: mutation

360 <222> LOCATION: (108)..(108)

361 <223> OTHER INFORMATION:

W--> 363 <220>

364 <221> NAME/KEY: mutation

365 <222> LOCATION: (152)..(152)

366 <223> OTHER INFORMATION:

W--> 368 <220>

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/10/001,245

DATE: 12/16/2002  
TIME: 13:00:11

Input Set : A:\Sequence Listing (ASCII copy).txt  
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:117; Xaa Pos. 53,54,126,127,199,200  
Seq#:118; Xaa Pos. 53,54,126,127,200,201  
Seq#:119; Xaa Pos. 53,54,103,126,127,198,199  
Seq#:120; Xaa Pos. 52,53,83,122,123,191,192  
Seq#:121; Xaa Pos. 30,52,53,122,123,195,196  
Seq#:122; Xaa Pos. 49,50,119,120,167,189,190  
Seq#:123; Xaa Pos. 45,46,48,75,105,108,109,145,168  
Seq#:124; Xaa Pos. 46,47,101,118,124,125,164,165  
Seq#:125; Xaa Pos. 9,42,43,98,99,100,101,154,155  
Seq#:126; Xaa Pos. 39,42,43,98,99,100,101,153,154  
Seq#:214; Xaa Pos. 1,2

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10/001,245

DATE: 12/16/2002

TIME: 13:00:11

Input Set : A:\Sequence Listing (ASCII copy).txt  
Output Set: N:\CRF4\12162002\J001245.raw

L:40 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:33  
L:45 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:38  
L:50 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:43  
L:55 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:48  
L:60 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:53  
L:65 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:58  
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L:127 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:2,Line#:120  
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L:137 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:2,Line#:130  
L:142 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:2,Line#:135  
L:147 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:2,Line#:140  
L:152 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:2,Line#:145  
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L:209 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:3,Line#:202  
L:214 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:3,Line#:207  
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L:276 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:4,Line#:269  
L:281 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:4,Line#:274  
L:286 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:4,Line#:279  
L:291 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:4,Line#:284  
L:291 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:4,Line#:289  
L:348 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:5,Line#:341  
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L:368 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:5,Line#:361  
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L:378 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:5,Line#:371  
L:378 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:5,Line#:376  
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VERIFICATION SUMMARY  
PATENT APPLICATION: US/10/001,245

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Input Set : A:\Sequence Listing (ASCII copy).txt  
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L:562 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:7,Line#:555  
L:567 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:7,Line#:560  
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L:8057 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:117 after pos.:112  
L:8077 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:117 after pos.:192  
L:8106 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:118 after pos.:48  
L:8122 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:118 after pos.:112  
L:8142 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:118 after pos.:192  
L:8171 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:119 after pos.:48  
L:8183 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:119 after pos.:96  
L:8187 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:119 after pos.:112  
L:8207 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:119 after pos.:192  
L:8236 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:120 after pos.:48  
L:8244 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:120 after pos.:80  
L:8252 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:120 after pos.:112  
L:8268 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:120 after pos.:176  
L:8293 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:121 after pos.:16  
L:8301 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:121 after pos.:48  
L:8317 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:121 after pos.:112  
L:8337 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:121 after pos.:192  
L:8366 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:122 after pos.:48  
L:8382 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:122 after pos.:112  
L:8394 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:122 after pos.:160  
L:8398 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:122 after pos.:176  
L:8423 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:123 after pos.:32  
L:8431 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:123 after pos.:64  
L:8439 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:123 after pos.:96  
L:8451 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:123 after pos.:144  
L:8455 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:123 after pos.:160  
L:8480 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:124 after pos.:32  
L:8496 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:124 after pos.:96  
L:8500 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:124 after pos.:112  
L:8512 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:124 after pos.:160  
L:8529 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:125 after pos.:0  
L:8537 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:125 after pos.:32  
L:8553 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:125 after pos.:96  
L:8565 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:125 after pos.:144  
L:8590 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:126 after pos.:32  
L:8606 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:126 after pos.:96  
L:8618 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:126 after pos.:144  
L:12542 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:214 after pos.:0